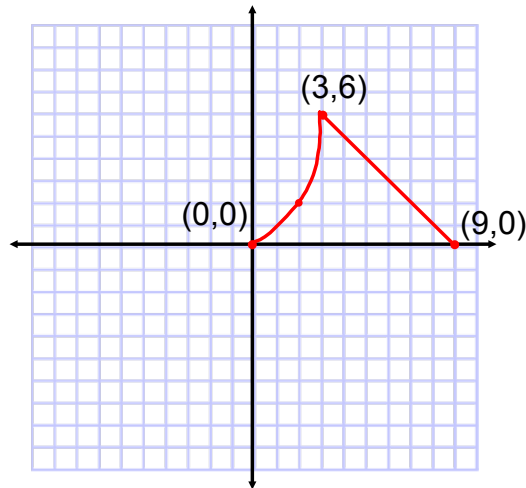


Precalc Warm Up #5-3

Check with your group!

Below is the graph of $f(x)$. Draw and label key points of the graph of

1. $f(\frac{1}{3}x)$ 2. $2f(x)$ 3. $-f(x)$ 4. $f(-x)$

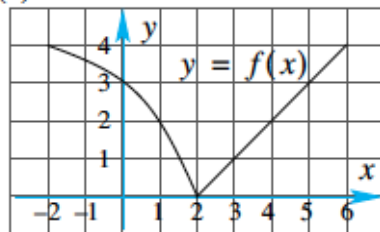


HW Questions: p. 181

EXERCISES 6.2

3. Consider the graphs shown below.

(a)



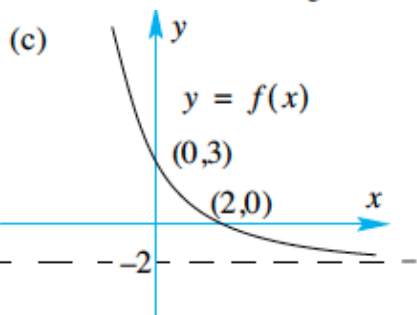
In each case, sketch the graph of

- | | |
|--------------------|-----------------|
| i. $y = f(0.5x)$ | ii. $y = f(2x)$ |
| iii. $y = 0.5f(x)$ | iv. $y = 2f(x)$ |

EXERCISES 6.3

p. 186

1. Sketch the graphs of i. $y = f(-x)$ ii. $y = -f(x)$ for each of the following



3. Sketch the graphs of the following

(a) $f(x) = -3x^2 + 9$

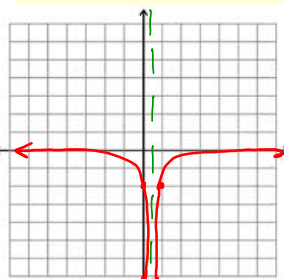
(d) $f(x) = -(x+2)^2 + 3$

(g) $f(x) = -(x-2)^3 - 2$

(j) $f(x) = 3 - \frac{2}{1-x}$

(m) $f(x) = -\frac{2}{(2x-1)^2}$

(p) $f(x) = 2(1 - \sqrt{x-2})$



parent $y = \frac{1}{x^2}$

$f(x) = -\frac{2}{[2(x-\frac{1}{2})]^2}$

d: horiz compress by $\frac{1}{2}$
 vertical stretch by 2
 r: \times S: $R + \frac{1}{2}$

$$f(x) = -\frac{2}{4(x-\frac{1}{2})^2}$$

$$= -\frac{1}{2(x-\frac{1}{2})^2}$$

$$= -\frac{1}{2} \left[\frac{1}{(x-\frac{1}{2})^2} \right]$$

5. Sketch the graphs of the following functions relative to the graph of

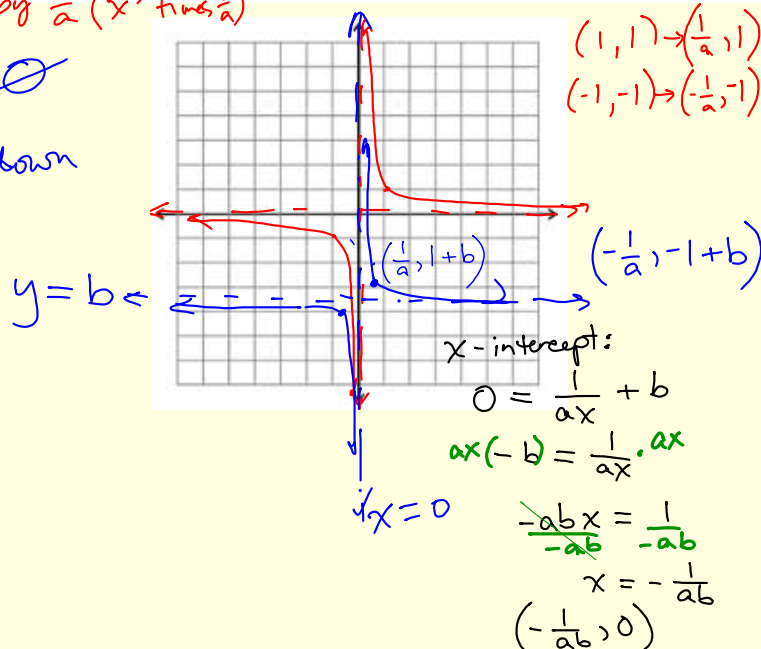
(a) $f(x) = \frac{1}{x}$ i. $y = f(ax) + b, a > 1, b < 0$

d: horiz. compression
by $\frac{1}{a}$ (x 's times $\frac{1}{a}$)

ii. $y = bf(a - x), b > 0, a > 0$

r: \emptyset

S: down



6. Consider the following transformations

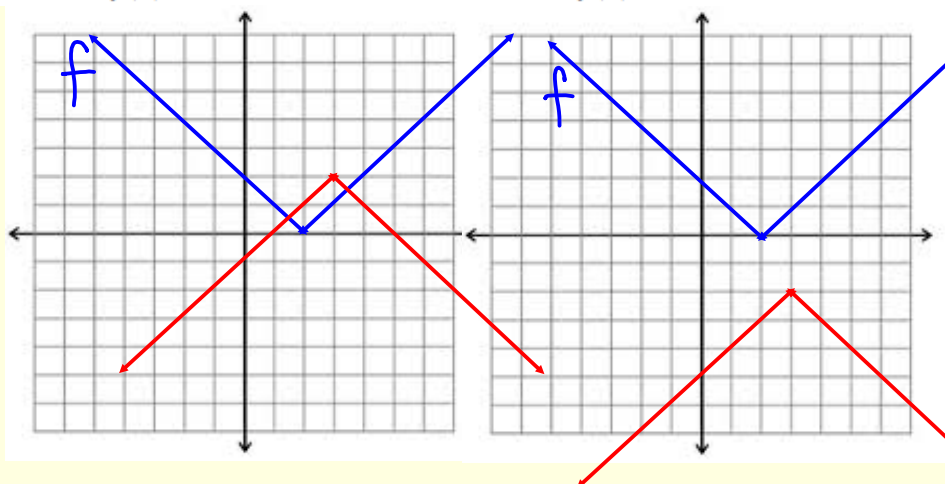
A: Reflection about x -axis. B: Reflection about y -axis C: $\begin{pmatrix} 1 \\ 2 \end{pmatrix}$

D: Squash by factor 2 along x -axis E: Stretch by factor 3 along y -axis

Sketch the graph of $f(x)$ under the transformations in their given order

(a) $f(x) = |x - 2|$, A; C.

(b) $f(x) = |x - 2|$, C; A.



Determine whether the function is odd, even, or neither.

$(-x, y)$ | (x, y) $f(x) = x^3 - 8x$
 $f(-x) = (-x)^3 - 8(-x)$
 $= -x^3 + 8x$
 exactly opposite $f(x)$
 so odd

A) odd

B) even

C) neither

$f(-x) = -f(x)$ $f(-x) = f(x)$

origin
Symmetry

y-axis
Symmetry

Find the value of a such that $f(a) = a$

$$f(x) = \frac{x - 9}{x - 5}$$

$$a = \frac{a - 9}{a - 5}$$

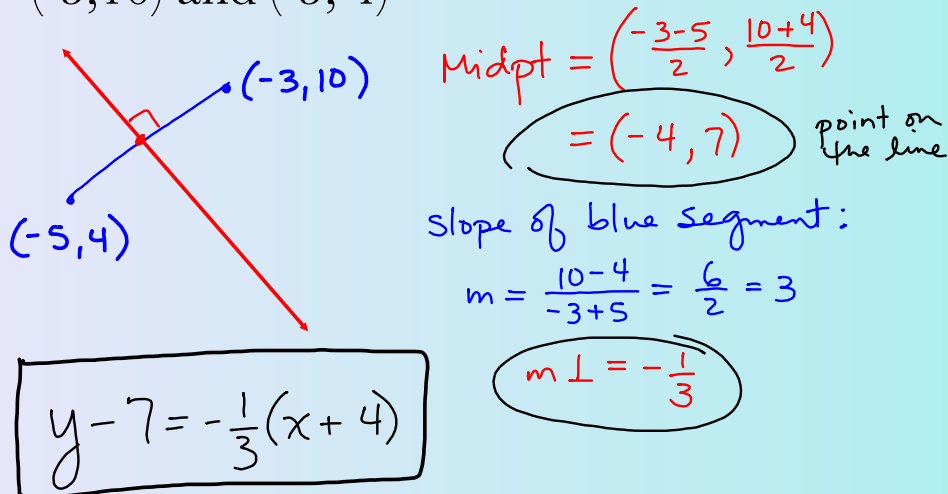
$$a^2 - 5a = a - 9$$

$$a^2 - 6a + 9 = 0$$

$$(a - 3)^2 = 0$$

$$\boxed{a = 3}$$

Find a relationship (equation) between x and y so that (x,y) is equidistant between $(-3,10)$ and $(-5, 4)$



Find the point slope equation of the line through $(-13, 46)$ and parallel to the line through $(5, -4)$ and $(8, 7)$.


→ same slope = $\frac{\Delta y}{\Delta x} = \frac{-4-7}{5-8}$
 $= \frac{11}{3} = \frac{11}{3}$

point on the line

$$y - 46 = \frac{11}{3}(x + 13)$$

HW: SL book

p. 113 #2h, 5RC and p. 187 #3MC

New directions for p. 187: 
State the parent $g(x)$ for each. Describe the transformations that map $g(x)$ to $f(x)$, then write $f(x)$ in terms of $g(x)$.

Quiz Tomorrow

PC: 2.1, 2.2, 2.4, 2.5

SL: 5.1, 5.2, 6.1, 6.2, 6.3

** Bring
PC
book*